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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/528,028	03/17/2000	Min-Seok Jang	0630-1060P	4328

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EXAMINER
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HOANG, PHUONG N

ART UNIT	PAPER NUMBER
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2126

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DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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# Office Action Summary

Application No.

09/528,028

Applicant(s)

JANG, MIN-SEOK

Examiner

Phuong N. Hoang

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**– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 - 3, 6 - 8, 11 - 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 3, 6 - 8, 11 - 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. Claims 1 – 3, 6 – 8, 11 - 24 are pending for examination.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1 – 3, 12 – 13, and 17 – 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (APA) and in view of Waldron, US patent no. 6,021,425.**

4. **As to claim 17**, the APA teaches the steps of event transfer system (p. 2, lines 19 – 20), each of a plurality of tasks (tasks 1- 4, p. 2) call a kernel system function of receiving an event with respect to one event in a multi-tasking environment (calls the kernel system function of receiving an event, p. 3 lines 7 – 15), blocking execution of said each of the tasks (tasks 3 and 4 are blocked, p. 3 lines 15 – 18), inserted into a

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waiting-list when no event is provided to the tasks (since the first task transfer no event yet, .... Queued into the waiting list, p. 3 lines 10 – 18).

However, the APA does not teach the tasks are inserted into a waiting list in priority order.

Waldron teaches the steps of tasks are inserted into a waiting list in a priority order (tasks are arranged in priority order, col. 5 lines 8 – 30 and col. 2 lines 5 - 14).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the APA and Waldron's system because Waldron's priority queue optimizes the threads organization and influences execution the schedule.

5. **As to claim 18**, Waldron teaches the steps of accessing the task having the highest priority from the waiting list of event when the event is provided (select the thread having highest priority, col. 6 lines 35 – 40), and executing the accessed task (executed).

6. **As to claim 19**, the APA teaches the steps of checking whether there is an event value exit when the kernel system function of receiving the event starts (it checks and knows that the first task transfers no event yet, p. 3 lines 8 – 14).

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7. **As to claim 20**, the APA as modified by Waldron teaches the steps of as a result of checking, the current task is blocked and queued into the waiting list (tasks 2 – 4 are blocked and queued into the waiting list, p.3 lines 1 – 18) according to the priority order.

8. **As to claim 21**, the APA teaches the steps of if the event value exists, the event value is obtained from the event control block buffer (receive event from the control block buffer, p. 3 lines 1 – 2), and as modified by the APA, the task is executing by sort of the event (execution, col. 4 lines 37 – 60).

9. **As to claim 1**, it is the method of claims 17 and 18. See rejection for claims 17 and 18 above.

10. **As to claim 2**, Waldron teaches the task having the highest priority is arranged at the most leading portion (priority classes are from highest to lowest order in the queue, col. 5 lines 8 – 30).

11. **As to claim 3**, see rejection for claim 19 above.

12. **As to claim 12**, see rejection for claim 21 above.

13. **As to claim 13**, see rejection for claim 20 above.

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**14. Claims 8, 11, 15, 16, and 23 - 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (APA) and in view of Waldron, US patent no. 6,021,425, and further in view of Farrell, US patent no. 5,247,675.**

15. Farrell reference was cited in the last office action.

16. **As to claim 23**, the APA and Waldron do not teach the steps of when the checking indicates that the waiting task exists in the waiting list, transferring an event value to the head task of the waiting list.

Farrell teaches the steps of the checking indicates that the waiting task exists (determines if the thread is already on the run list, col. 6 lines 15 – 20), transferring an event value to the head task of the waiting-list (the current thread is a highest priority on the run list, col. 5 lines 15 – 47).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the APA, Waldron, and Farrell's system because Farrell's checking for existing task would provide a sufficient scheduling without wasting time and memory to run an empty queue.

**17. As to claim 24**, Farrell teaches the steps of the head task is inserted into the ready list (it is unblocked and unsuspended for ready to run, col. 5 lines 20 – 25), and the routine by sort of the event is executed (executing, col. 5 lines 20 – 30).

18. **As to claim 8**, see rejection for claim 23 above for checking step.
19. **As to claim 15**, the APA teaches the steps of when the waiting task does not exist, an event value is stored in the event control block (queued into the event control block, p. 3 lines 10 –15).
20. **As to claim 16**, the APA modified by Waldron teaches the steps of when the waiting task exists (col. 6 lines 35 – 40), an event value is transferred to the head task.
21. **As to claim 11**, see rejection for claim 24 above.
22. **Claims 6, 7, 14, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over the admitted prior art (APA), in view of Waldron, US patent no. 6,021,425, and further in view of Thomas E. Saulpaugh, U.S. patent no. 5,734,903.**
23. Saulpaugh reference was cited in the last office action.
24. **As to claims 6, 14, and 22**, the APA and Waldron do not teach the steps of event ID, generating error code in case of invalidity.  
  
Saulpaugh teaches the steps of event ID (message ID, col. 23 lines 45 – 55) generating error code in case of invalidity (invalid ID error, col. 23 lines 45 – 55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of the APA, Waldron, and Saulpaugh's system because Saulpaugh's generating error capability would improve the integrity of the APA and Waldron's system by only transferring the valid data.

25. **As to claim 7**, Saulpaugh teaches the step of timeout option (timeout, col. 23, lines 1 – 3).

### ***Conclusion***

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Huynh et al., US patent no. 5,386,561, demonstrating preemptive priority scheduling method.

Belo, US patent no. 5,379,428, demonstrating scheduling and dispatching processes having capability prioritizing tasks.

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong N. Hoang whose telephone number is (703) 605-4239. The examiner can normally be reached on Monday - Friday 9:00 am to 5:30 pm.




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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (703)305-9678. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ph  
May 17, 2004

  
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